PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

AEJ/C #18/12/18/02

In re Application of	:	Wei-Kuo Lee, et al.
Serial No.	:	09/311,480
Filing Date	:	May 13, 1999
For	:	CABLE SEMICONDUCTING SHIELD
Group Art Unit	:	1773
Examiner	:	Kruer, K
Attorney Docket No.	:	D-17965

CERTIFICATION UNDER 37 CFR 1.8(a) and 1.10

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REPLY UNDER 37 C.F.R. §1.111

Sir:

Please amend the claims as shown in the attached replacement sheets submitted in accordance with 37 C.F.R. §1.121(c). The amendments are illustrated by the attached black-line version, and they are explained in the following remarks.

Claims 1-9 are rejected under 35 U.S.C. §112, second paragraph, as indefinite. Specifically, Claims 1, 7 and 9 are rejected for the phrase "based on the weight of the copolymer

or a silicone rubber". The Examiner argues that this phrase is unclear as to whether (a) the amount of acrylonitrile is based upon the copolymer or silicone rubber, or (b) the composition may optionally contain a nitrile rubber or a silicone rubber. Claims 1, 7 and 9 are amended with the insertions of romanettes (i) and (ii) to render clear that the phrase refers to the amount of acrylonitrile present in the copolymers.

Claims 3 and 7 are rejected for the phrase "and methacrylic acid esters wherein the ester is present in the copolymer in an amount of about 20 to about 55 percent by weight". The Examiner argues that the phrase is unclear as to whether it refers to (a) the amount of ester in the copolymer, or (b) the amount of ester present in the copolymer regardless of which copolymer is utilized. Claims 3 and 7 (and 9) are amended to render clear that the amount of about 20 to about 55 percent by weight refers to the amount of unsaturated ester in the ethylene/unsaturated ester copolymer.

Claim 7 is rejected because the preamble is unclear. The Examiner argues that the phrases "one or more" or "two or more" are repetitive, and that all embodiments of the invention have a "core". Claim 7 (and Claim 1) are amended to delete "of two or more electrical conductors or communications media" to render clear that the invention is drawn to a cable comprising one or more electrical conductors, communications media or cores.

Finally, Claim 10 is rejected for the lack of an antecedent basis for "of polymer". However, the applicants assume that this rejection is an inadvertent error by the Examiner since Claim 10 was canceled by the After Final Amendment filed on June 3, 2002.

Claims 1-2 and 4 are rejected under 35 U.S.C. §103(a) as obvious over applicants' admissions in view of Nahass et al. (USP 5,591,382). In brief, the Examiner argues that the applicants' admit to the general construction of a typical electrical power cable, and the use of carbon black in the composition of the semiconducting shield layer(s). The Examiner acknowledges that the applicants do not admit to the known use of carbon nanotubes as a substitute for carbon black, but the Examiner relies upon Nahass et al. for this teaching.

Specifically, the Examiner argues that Nahass et al. teach that carbon fibrils have been used in place of carbon black in conductive compositions (although he does not argue that they have ever been used in semiconducting shield layers), and he thus concludes that the substitution of carbon fibrils for carbon black in the construction of semiconductor shield layers would have been obvious to one of ordinary skill in the art at the time the applicants made their invention. The applicants respectfully traverse.

To begin, the applicants first note that Claim 1 is amended at subparagraph (c) by the deletion of "optionally", and that Claim 8 is amended by the addition of subparagraph (c). As such, Claims 1 and 8 (and thus the claims that depend from these independent claims) require the presence of both carbon black and carbon nanotubes.

Nothing in Nahass et al. suggest the substitution of carbon nanotubes for carbon black in the preparation of semiconductor shield layers (and this assumes, *arguendo*, that carbon fibrils are synonymous with carbon nanotubes; this is not necessarily the case). More importantly, nothing in Nahass et al. suggest replacing same portion of the carbon black with carbon nanotubes in the preparation of a semiconductor shield layer. The difference is important, and this is shown in the examples of the present application.

First, note at page 18, Table 1, that Example 1 reports a composition of which 38 weight percent is carbon black. This table also reports in Example 4 in which the composition is 19 weight percent carbon black and 10 weight percent carbon nanotubes (for a total of 29 weight percent, which, for purposes of these examples, is approximately the same as 38 weight percent).

Second, note that Table 1 reports the viscosity for both of these compositions, and the viscosity of the Example 1 composition (all carbon black) is significantly higher at various shear rates than the viscosity of the Example 4 composition. The lower viscosity of Example 4 is important to a more facile in the processing of the composition into a semiconductor shield layer. This lower viscosity is even more striking when compared against the composition of Example 2 which contains 20 weight percent carbon nanotubes and 0 weight percent carbon black. The

viscosity of the composition of Example 2 is even greater across the various shear rates than that of the composition of Example 1.

Third, at page 20, Table 2 of the specification, the volume resistivities of the compositions of Examples 1-4 are reported. Note that not only is the volume resistivity of the composition of Example 4 comparable to that of the composition of Example 1, but it is much more stable over various thermal cycles than the volume resistivity of the Example 1 composition.

Furthermore, "carbon fibers" are not "carbon fibrils". The former are discussed at column 1, lines 27-35 while the latter are described in Nahass et al. at column 2, lines 1-14. In the context of the Nahass et al. patent, the use of carbon fibers provides a conductive, static-dissipative or anti-static polymeric composition that is part of the prior art, while the use of carbon fibrils is part of the practice of their invention.

With this understanding of the Nahass et al. patent, note that the Nahass et al. teaching is limited to the total substitution of carbon fibrils for any of the prior art additives, including carbon black, and not to a combination of a prior art additive and carbon fibrils. Not only is the Nahass et al. patent void of any teaching or suggestion of using carbon fibrils in combination with carbon black, but it is also suggestive that such combinations are undesirable. In this regard, please note Nahass et al. at column 6, lines 48-55 in which techniques commonly used for dispersing carbon black within a polymer matrix are described as relatively ineffective for carbon fibrils. This suggests that blends of carbon black and carbon fibrils will not disperse in a desirable manner because while the method for dispersion will be effective for one component of the blend, it will not be for the other.

Just as importantly, the Nahass et al. patent is void of any incentive for one skilled in the art to blend carbon fibrils with other forms of carbon black. Not only does it suggest that such combinations would be difficult to work into the polymer matrix as noted above, but it does not provide any reason to move in this direction. The Examiner argues otherwise, but his reasons are

not found in Nahass et al. Rather, the Examiner reads his reasons into Nahass et al. based upon the plethora of reasons cited by the applicants in their specification. For example, the applicants note the following at page 15 of their specification:

> "Where a combination of carbon nanotubes and another conductive carbon black is used, there is a lower cost; a cleaner composition; lower filler loadings; higher production rates; easier manufacturing and end use compounding; and better mechanical and electrical properties...Further there can be a synergistic effect between the carbon nanotubes and the conductive carbon blacks with respect to electrical properties, particularly conductivity, which is found to change less with time than systems containing only conductive carbon blacks, and it appears that the carbon nanotubes blends are more stable. There is also a benefit with respect to rheological properties in terms of lower shear viscosity, which can lower power needs in compounding; improve processibility; and lower extrusion temperatures resulting in better thermal stability. In the mixed system, volume resistivity is adequate at lower viscosities, and shows very small change with temperature, which is advantageous for lower dissipation factor."

None of these reasons are found in Nahass et al. for the very good and sufficient reason that Nahass et al. does not teach a blend of carbon nanotubes and another conductive carbon black.

Moreover, the Examiner does not allege any motivation within Nahass et al. to form a cable having a layer comprising both carbon nanotubes and carbon black, and for good reason. The fibril containing compositions of Nahass et al. are disclosed for the purpose of making products including automobile parts suitable for electro-static painting, appliance housing components suitable for electro-static painting, computer housings capable of EMI shielding, and integrated circuitries and micro-electronics packaging materials suitable for static dissipation. See col 7, lines 47-51. Thus, Nahass et al. does not disclose a composition used for the same purpose as the current invention.

The Examiner is respectfully requested to reconsider this basis of rejection, and then to withdraw it.

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Claims 1-5, 7 and 9 are also rejected under 35 U.S.C. §103(a) as obvious over Ongchin (USP 4,286,023) in view of Nahass et al. The Examiner argues that Ongchin teaches an article of manufacture comprising one or more strands of a conducting metal or alloy, a layer of semiconductor shielding, a layer of insulation and a layer of strippable semiconductive composition. The Examiner acknowledges that Ongchin does not teach carbon fibrils as an additive to the semiconducting shield compositions, but argues that Nahass et al. make this suggestion. Again, the applicants respectfully traverse.

With respect to Claims 1-4, the teachings of Ongchin add little to the generic description (a/k/a the Applicants' admissions). Ongchin merely provides further details of a typical carbon black based semiconductive composition and a disclosure of the weight percent vinyl acetate monomer in the EVA.

However, like the Applicants' admissions, Ongchin does not teach the use of carbon fibrils in the preparation of semiconducting shields and as such, it can not teach blends of carbon fibrils with other carbon black materials in the preparation of semiconducting shields. Similarly, it can not provide any incentive to one of ordinary skill in the art to use a blend of carbon fibrils and other carbon black to prepare semiconducting shields. Moreover, the rationale of *In re Kerkhoven* is irrelevant to the facts of this case because Nahass et al. does not disclose a compound used for the same purpose as the currently claimed invention; as discussed in Error 2 above and incorporated herein by reference. Even more, neither Ongchin nor Nahass et al. disclose or suggest the excellent results obtained by the current invention which combines nanotubes and a carbon black other than nanotubes as shown in Examples 5-8.

Regarding Claims 5 and 7, Ongchin does not teach that carbon fibrils may be added to the semiconducting shield compositions. Also, Nahass et al. do not disclose the use of carbon fibrils in cable shielding. Rather, Nahass et al. teach the use of carbon fibrils in automobile parts suitable for electrostatic painting, appliance housing components suitable for electrostatic painting, computer housings and integrated circuitries and microelectronic packaging materials. Thus, Nahass et al. do not disclose the use of fibrils for the same purpose as taught in the current

invention, i.e., a shielded cable. Therefore, the rationale of *In re Kerkhoven* cited by the Examiner is inappropriate. Hence, the Examiner must show motivation to combine the references or to establish a *prima facie* case. However, the Examiner has stated no motivation found in the prior art for combining the two references.

Regarding Claims 5, 7 and 9, even if, *arguendo*, Nahass et al. and Ongchin were properly combinable (which the Applicants strongly disagree), their combination does not suggest optimizing the relative amounts of carbon black and carbon fibrils in an electrical cable shielding. For the Examiner to base an obviousness rejection on "obvious experimentation", such experimentation must come from "*within the teachings of the art*". *In re Waymouth and Koury*, 182 USPQ 290, 292 (CCPA 1974) (emphasis in original). In the current case, this suggestion is missing.

First, there is no disclosure in either Nahass et al. or Ongchin to suggest the exceptionally good results obtained by the current invention. The applicants particularly note the unexpected stability of volume resistivity with temperature cycling and time achieved by the current invention. See Examples 5-8.

Second, the experimentation proposed by the Examiner does not come from "within the teachings of the art". In the current case, Nahass et al. teach the use of 100% carbon fibrils and Ongchin teaches the use of 100% carbon black. Neither reference teaches or suggests any experimentation with the ratio of nanotubes to carbon black (other than to teach use of one to the <u>exclusion</u> of the other). As such, any experimentation to optimize the carbon black and carbon fibrils weight percentage ranges does not come from *"within the teachings of the art"* as required by Waymouth and therefore cannot be obvious. In order to base the rejection on elements not disclosed in the prior art, the Examiner must assume that both the claim limitations and the specific claimed values for those limitations are inherent in the prior art. The Federal Circuit has already held that such assumptions are impermissible as "a retrospective view of inherency" which "is not a substitute for some teaching or suggestion supporting an obviousness rejection."

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In re Rijckaert, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). As such, the Examiner's attempted *prima facie* case of obviousness fails.

Moreover, this rejection is even more tenuous than the previous rejection because it is that much more removed from the claimed invention. In other words, since these references do not teach or suggest or encourage semiconducting shields made from blends of carbon black and carbon nanotubes, then these references, alone or in combination with one another, can not even begin to teach or suggest the relative amounts of each to use in the shields.

This basis of rejection is also traversed and the Examiner is respectfully requested to withdraw it.

Claims 1, 6, 8 and 10 are rejected under 35 U.S. C. §103(a) as obvious over Ongchin in view of Silver et al. (USP 4,317,001) and Nahass et al. Again Claim 10 was cancelled by the After Final Amendment filed June 3, 2001.

Silver et al. is added to the mix because it is argued to teach an insulation layer for an electrical cable having a stated volume resistivity, the layer comprising carbon black. However, as admitted by the Examiner, Silver et al. do not teach the use of carbon fibrils as a conductive filler or an insulating layer and as such, it offers no more to this basis of rejection than does Ongchin to the earlier basis of rejection.

In addition, there is no disclosure in either Nahass et al. or Ongchin to suggest the exceptionally good results obtained by the current invention. The Appellant particularly notes the unexpected stability of volume resistivity with temperature cycling in time achieved by the current invention. See Examples 5-8.

Regarding Claims 6 and 8, given that nothing in Ongchin, Silver et al. or Nahass et al. teach the combination of carbon nanotubes in carbon black other than nanotubes in a semiconducting shielding layer of a cable, clearly there can be no teaching of a specific weight percentage of carbon nanotubes to use in combination with the carbon black.

Moreover, Claim 6 is of course, dependent from Claim 1 and is allowable for at least the reasons that Claim 1 is allowable.

Once again, this basis of rejection is traversed for the reasons stated above, and the Examiner respectfully requested to withdraw it.

Claims 1-5, 7 and 9 are rejected under 35 U.S.C. §103(a) as obvious over Burns et al. (EP 0 420 271 A1) in view of Nahass et al. Burns et al. is argued to teach an insulated electrical conductor using one or more strands of a conducting metal or alloy with, among other things, a layer of semiconductive shielding. Here again, the Examiner has acknowledged that Burns et al. do not teach that carbon fibrils may be added to the semiconducting shield composition. As such, Burns et al. adds nothing more than that already taught by Ongchin or Silver et al. Here again, the applicants incorporate by reference all of the arguments made above with respect to the teachings of Nahass et al., Ongchin and Silver et al. If these previous rejections can not render obvious the claimed invention because they fail to teach or suggest a blend of carbon nanotubes with other carbon black, and the rationale of *In re Kerkhoven* is irrelevant to these facts, then this present rejection must also fail for the same reasons.

As noted above, Burns et al. add nothing more than that already taught by Ongchin and Silver et al. Also, as noted with the previous rejection of Claims 5, 7 and 9, this basis of rejection is even more removed from the claimed invention because not only does it fail to teach the blend of carbon nanotubes and other carbon black, but because of its very nature it must also fail to teach the required relative amounts of each.

Regarding Claims 5 and 7, these dependent claims are allowable as argued above. As the Examiner admits, Burns et al. does not teach that carbon fibrils may be added to the semiconducting shield compositions. Also, and in contrast to the Examiner's position, Nahass et al. do not disclose the use of carbon fibrils in cable shielding. Rather, Nahass et al. teach the use of carbon fibrils in automobile parts suitable for electrostatic painting, appliance housing components suitable for electrostatic painting, computer housings and integrated circuitries and microelectronic packaging materials. Thus, Nahass et al. do not disclose the use of fibrils for the same purpose as taught in the current invention, i.e., a shielded cable. Therefore, the rationale of *In re Kerkhoven* cited by the Examiner is inappropriate. Hence, the Examiner must show motivation to combine the references or to establish a *prima facie* case. However, the Examiner has stated no motivation found in the prior art for combining the two references. Therefore, this rejection is in error.

Regarding Claims 5, 7 and 9, even if, *arguendo,* Nahass et al. and Burns et al. were properly combinable (which the Applicants strongly disagree), their combination does not suggest optimizing the relative amounts of carbon black and carbon fibrils in an electrical cable shielding. For the Examiner to base an obviousness rejection on "obvious experimentation", such experimentation must come from "*within the teachings of the art*". *In re Waymouth and Koury,* 182 USPQ 290, 292 (CCPA 1974) (emphasis in original). In the current case, this suggestion is missing.

First, there is no disclosure in either Nahass et al. or Burns et al. to suggest the exceptionally good results obtained by the current invention. The applicants particularly note the unexpected stability of volume resistivity with temperature cycling and time achieved by the current invention. See Examples 5-8.

Second, the experimentation proposed by the Examiner does not come from "within the teachings of the art". In the current case, Nahass et al. teach the use of 100% carbon fibrils and Burns et al. teaches the use of 100% carbon black. Neither reference teaches or suggests any experimentation with the ratio of nanotubes to carbon black (other than to teach use of one to the

exclusion of the other). As such, any experimentation to optimize the carbon black and carbon fibrils weight percentage ranges does not come from *"within the teachings of the art"* as required by Waymouth and therefore cannot be obvious. In order to base the rejection on elements not disclosed in the prior art, the Examiner must assume that both the claim limitations and the specific claimed values for those limitations are inherent in the prior art. The Federal Circuit has already held that such assumptions are impermissible as "a retrospective view of inherency" which "is not a substitute for some teaching or suggestion supporting an obviousness rejection." *In re Rijckaert*, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). As such, the Examiner's attempted *prima facie* case of obviousness fails.

Here too, this basis of rejection is traversed for the reasons stated above, and the Examiner respectfully requested to withdraw it.

Respectfully submitted,

Gary R Plotecher

Gary R. Plotecher
Registration No. 27,830

Dated: December 16, 2002

P.O. ADDRESS:

WHYTE HIRSCHBOECK DUDEK S.C.
111 East Wisconsin Avenue, Suite 2100
Milwaukee, Wisconsin 53202
(414) 273-2100
Customer No. 022202

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Black-line of Claims

1. A cable comprising one or more electrical conductors ~~or~~, communications media or a core ~~of two or more electrical conductors or communications media~~, each electrical conductor, communications medium, or core being surrounded by a layer comprising:

(a) polyethylene; polypropylene; or mixtures thereof;

(b) carbon nanotubes;

(c) ~~optionally,~~ a conductive carbon black other than carbon nanotubes; and

(d) optionally, (i) a copolymer of acrylonitrile and butadiene wherein the acrylonitrile is present in an amount of about 30 to about 60 percent by weight based on the weight of the copolymer, or (ii) a silicone rubber.

2. The cable defined in claim 1 wherein component (a) is a copolymer of ethylene and an unsaturated ester.

3. The cable defined in claim 2 wherein the unsaturated ester of the ethylene/unsaturated ester copolymer is selected from the group consisting of vinyl esters, acrylic acid esters, and methacrylic acid esters, and wherein the unsaturated ester is present in the ethylene/unsaturated ester copolymer in an amount of about 20 to about 55 percent by weight.

4. The cable defined in claim 1 wherein the layer is a semiconducting shield and component (b) is present in an amount of about 13 to about 100 parts by weight per 100 parts by weight of component (a).

5. The cable defined in claim 1 wherein the layer is a semiconducting shield and, for each 100 parts of component (a), component (b) is present in an amount of about 1 to about 35 parts by weight; component (c) is present in an amount of about 13 to about 100 parts by weight; and the weight ratio of component (b) to component (c) is about 0.1:1 to about 10:1.

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6. The cable defined in claim 1 wherein the layer is an insulation layer and component (b) is present in an amount of about 0.01 to about 1 part by weight per 100 parts by weight of component (a).

7. A cable comprising one or more electrical conductors ~~or~~, communications media or a core ~~of two or more electrical conductors or communications media~~, each electrical conductor, communications medium, or core being surrounded by a semiconducting shield layer comprising:

(a) ~~a copolymer~~ an ethylene/unsaturated ester copolymer comprising an unsaturated ester selected from the group consisting of vinyl esters, acrylic acid esters, and methacrylic acid esters, and wherein the unsaturated ester is present in the ethylene/unsaturated ester copolymer in an amount of about 20 to about 55 percent by weight.

(b) carbon nanotubes;

(c) a conductive carbon black other than carbon nanotubes; and

(d) optionally, (i) a copolymer of acrylonitrile and butadiene wherein the acrylonitrile is present in an amount of about 30 to about 60 percent by weight based on the weight of the copolymer, or (ii) a silicone rubber.

with the proviso that, for each 100 parts of component (a), component (b) is present in an amount of about 2 to about 20 parts by weight; component (c) is present in an amount of about 15 to about 80 parts by weight; and the weight ratio of component (b) to component (c) is about 0.2:1 to about 8:1.

8. A cable comprising one or more electrical conductors ~~or~~, communications media or a core ~~of two or more electrical conductors or communications media~~, each electrical conductor, communications medium, or core being surrounded by a layer comprising:

(a) polyethylene; polypropylene; or mixtures thereof; ~~and~~

(b) carbon nanotubes,

with the proviso that, for each 100 parts of component (a), component (b) is present in an amount of about 0.05 to about 0.3 part by weight; and

(c) a conductive carbon black other than carbon nanotubes.

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9. A composition comprising:

(a) ~~a copolymer~~ an ethylene/unsaturated ester copolymer comprising an unsaturated ester selected from the group consisting of vinyl esters, acrylic acid esters, and methacrylic acid esters, and wherein the unsaturated ester is present in the ethylene/unsaturated ester copolymer in an amount of about 20 to about 55 percent by weight.

(b) carbon nanotubes;

(c) a conductive carbon black other than carbon nanotubes; and

(d) optionally, (i) a copolymer of acrylonitrile and butadiene wherein the acrylonitrile is present in an amount of about 30 to about 60 percent by weight based on the weight of the copolymer, (ii) or a silicone rubber

with the proviso that, for each 100 parts of component (a), component (b) is present in an amount of about 1 to about 35 parts by weight; component (c) is present in an amount of about 13 to about 100 parts by weight; and the weight ratio of component (b) to component (c) is about 0.1:1 to about 10:1.

~~10.~~ Canceled. ~~A composition comprising a polymer selected from the group consisting of polyethylene; polypropylene; and mixtures thereof, and 0.01 to 1 part by weight carbon nanotubes per 100 parts by weight of the polymer.~~

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Claims

C1

1. A cable comprising one or more electrical conductors, communications media or a core, each electrical conductor, communications medium, or core being surrounded by a layer comprising:

(a) polyethylene; polypropylene; or mixtures thereof;

(b) carbon nanotubes;

(c) a conductive carbon black other than carbon nanotubes; and

(d) optionally, (i) a copolymer of acrylonitrile and butadiene wherein the acrylonitrile is present in an amount of about 30 to about 60 percent by weight based on the weight of the copolymer, or (ii) a silicone rubber.

2. The cable defined in claim 1 wherein component (a) is a copolymer of ethylene and an unsaturated ester.

3. The cable defined in claim 2 wherein the unsaturated ester of the ethylene/unsaturated ester copolymer is selected from the group consisting of vinyl esters, acrylic acid esters, and methacrylic acid esters, and wherein the unsaturated ester is present in the ethylene/unsaturated ester copolymer in an amount of about 20 to about 55 percent by weight.

4. The cable defined in claim 1 wherein the layer is a semiconducting shield and component (b) is present in an amount of about 13 to about 100 parts by weight per 100 parts by weight of component (a).

5. The cable defined in claim 1 wherein the layer is a semiconducting shield and, for each 100 parts of component (a), component (b) is present in an amount of about 1 to about 35 parts by weight; component (c) is present in an amount of about 13 to about 100 parts by weight; and the weight ratio of component (b) to component (c) is about 0.1:1 to about 10:1.

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6. The cable defined in claim 1 wherein the layer is an insulation layer and component (b) is present in an amount of about 0.01 to about 1 part by weight per 100 parts by weight of component (a).

7. A cable comprising one or more electrical conductors, communications media or a core, each electrical conductor, communications medium, or core being surrounded by a semiconducting shield layer comprising:

(a) an ethylene/unsaturated ester copolymer comprising an unsaturated ester selected from the group consisting of vinyl esters, acrylic acid esters, and methacrylic acid esters, and wherein the unsaturated ester is present in the ethylene/unsaturated ester copolymer in an amount of about 20 to about 55 percent by weight.

(b) carbon nanotubes;

(c) a conductive carbon black other than carbon nanotubes; and

(d) optionally, (i) a copolymer of acrylonitrile and butadiene wherein the acrylonitrile is present in an amount of about 30 to about 60 percent by weight based on the weight of the copolymer, or (ii) a silicone rubber.

with the proviso that, for each 100 parts of component (a), component (b) is present in an amount of about 2 to about 20 parts by weight; component (c) is present in an amount of about 15 to about 80 parts by weight; and the weight ratio of component (b) to component (c) is about 0.2:1 to about 8:1.

8. A cable comprising one or more electrical conductors, communications media or a core, each electrical conductor, communications medium, or core being surrounded by a layer comprising:

(a) polyethylene; polypropylene; or mixtures thereof;

(b) carbon nanotubes;

with the proviso that, for each 100 parts of component (a), component (b) is present in an amount of about 0.05 to about 0.3 part by weight; and

(c) a conductive carbon black other than carbon nanotubes.

9. A composition comprising:

(a) an ethylene/unsaturated ester copolymer comprising an unsaturated ester selected from the group consisting of vinyl esters, acrylic acid esters, and methacrylic acid esters, and wherein the unsaturated ester is present in the ethylene/unsaturated ester copolymer in an amount of about 20 to about 55 percent by weight.

(b) carbon nanotubes;

(c) a conductive carbon black other than carbon nanotubes; and

(d) optionally, (i) a copolymer of acrylonitrile and butadiene wherein the acrylonitrile is present in an amount of about 30 to about 60 percent by weight based on the weight of the copolymer, (ii) or a silicone rubber

with the proviso that, for each 100 parts of component (a), component (b) is present in an amount of about 1 to about 35 parts by weight; component (c) is present in an amount of about 13 to about 100 parts by weight; and the weight ratio of component (b) to component (c) is about 0.1:1 to about 10:1.

A Cont'd

10. Canceled.

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